

Energy Pyramid, Food chains/webs

Word Bank: *consumer, autotrophic, increase, carnivore, omnivore, herbivore, scavengers, decomposers, producer, heterotrophic, energy, primary consumer, secondary consumer*

- A _____ is an organism at the beginning of a food chain; make their own food
- Organisms, like plants, that can make their own food are _____.
- Organisms that feed off of other organisms are _____.
- A _____ is an organism that eats producers or other organisms for energy.
- A consumer that eats only producers is called a (n) _____.
- A consumer that eats both plants and animals is called a (n) _____.
- _____ is transferred through an ecosystem by eating or consuming food.
- _____ eat things that are already dead (ex. vulture)
- _____ break down decaying organisms and nutrients are put back into the soil by bacteria and fungi like mushrooms)
- Use the following food chain to answer the questions that follow:
 Grass ----> rabbit ----> fox ----> hunter
 - In food webs or food chains, the arrow ALWAYS points to the direction that _____ flows.
 - In this food chain, the rabbit is a _____, the fox is a _____, and the grass is a _____.
 - In this example, if the rabbit population increased, then the fox population would probably _____.

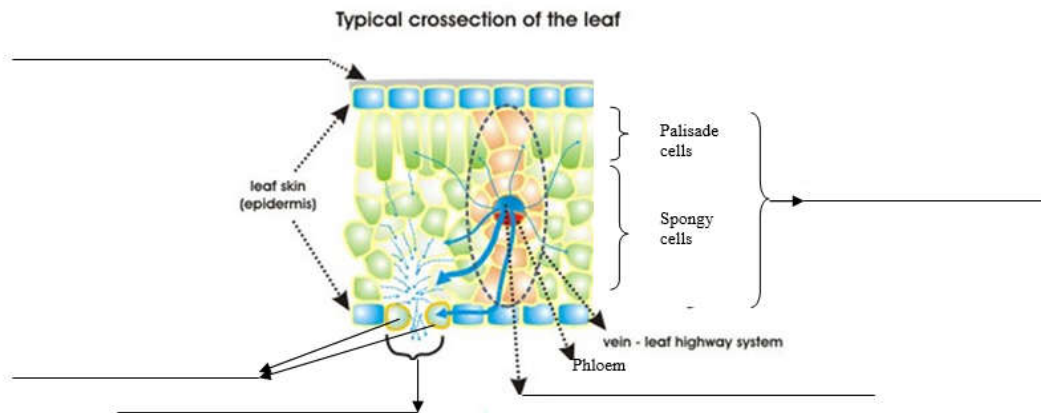
Word bank:

transferred, photosynthesis, created/destroyed, heat, 10%, glucose

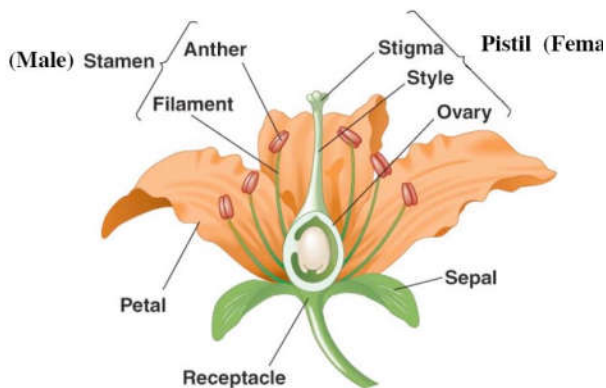
- _____ 1. Cells use this molecule as their main source of immediate energy.
- _____ 2. This process converts water and carbon dioxide into sugars and oxygen.
- _____ 3. Each trophic level gets only this amount of energy from the one below it.
- _____ 4. When energy is lost, it is given off in this form.
5. The First Law of Thermodynamics states that energy
 can not be _____; it can only be
 _____.

Flower and leaf structure

- Label the diagram of the leaf cross-section below using the following terms. Know the **function of the plant structures** (including the ones that were already labelled for you)
stomata *xylem* *guard cells* *mesophyll* *cuticle*

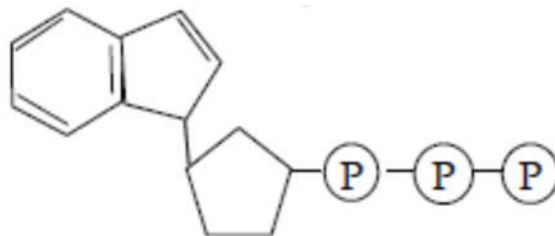


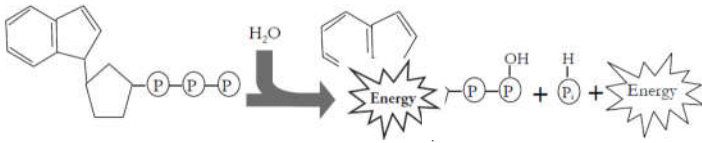
- Know the structures of a flower and their function



ATP:

- What does ATP stand for?
- List the three parts of an ATP molecule and then label each on the simplified model of ATP shown below





The picture above illustrates a chemical reaction that occurs with ATP.

3. Identify the bond that was broken in this reaction and the new bonds that were formed.
4. Does the hydrolysis of ATP involve a *net input* or a *net output* of energy?

Photosynthesis:

1. What is the balanced chemical equation for photosynthesis?
2. Where in the plant cell does photosynthesis occur (starts with a C)
3. How are the products of photosynthesis related to cellular respiration, and vice versa?

Cellular Respiration:

Aerobic Respiration
Cellular Respiration

Anaerobic Respiration
Mitochondria

Glycolysis

1. _____ is the process where glucose is used to make ATP.
 2. Anaerobic Respiration occurs in the _____ of cells
 3. _____ the process in which a glucose molecule is split into 2 pyruvate molecules;
 4. _____ a process that requires oxygen
 5. _____ a process that does not require oxygen
6. The grand total of ATP produce during glycolysis and aerobic respiration is approximately
- a. 45 b. 36 c. 2 d. 10
7. What is the balanced chemical equation for cellular respiration?
8. What is the chemical equation for lactic acid fermentation?
3. What is the biggest advantage of lactic acid fermentation? What is the biggest disadvantage?